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INTEGRATING VOICE AND DATA COMMUNICATIONS

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NTT JOSTLES THROUGH A TOUGH PERIOD

In the midst of unprecedented change, internal and external pressures are being brought to bear. How is NTT coping?

EC TURNS UP PRESSURE

Liberalization reform mandate expected this week

FCC PLANS ITS OWN PRICE CAP PLAN

Patrick bows to congressional pressure

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Telephony

INTEGRATING VOICE AND DATA COMMUNICATIONS

NTT is in the midst of unprecedented change. Internal and external pressures are being brought to bear on one of the leading telecom companies. Cover photo courtesy of COMSTOCK Inc./Marvin Koner

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Good news comes unexpectedly!

International telecom spending on the rise

The decade of the 1980s has been marked by negative or sluggish growth in international telecommunications spending. Unexpectedly, 1988 will see an increase in the real growth rate of the industry. Here's what is going to happen and a look at the larger forces shaping the industry's future

LARRY LANNON, Editor, and CZATDANA INAN, Marketing Development and Research Director

You never know what's going to happen next!

The gloomy '80s suddenly gleam with an unanticipated light. Absolute spending and the rate of real growth of international spending are both up.

The international telecommunications industry will sustain a healthy growth rate in 1988, *Telephony's* exclusive annual survey of international spending plans reveals.

The survey tracks spending by leading PTTs and private telephone companies. Fifty countries, including all the leading countries in telecommunications, participated in this survey.

Growth

In 1988, the 50 participating countries plan to spend $93.4 billion, up $7.2 billion from the $86.2 billion they spent in 1987. Real growth in international telecommunications spending will increase from 6.3% last year to 8.35% this year. That is a 1.5% increase in the real growth rate.

Total spending, including estimates for those countries that declined to participate in our survey, will be about $109.1 billion in 1988. Last year, total international spending was $100.7 billion. Thus, total world spending will increase by $8.4 billion this year, a growth rate of 8.3%. Complete international spending information is shown in Table 1.

The 1.5% increase in real growth comes as a pleasant surprise. In 1986, real growth was pegged at 6.6%, so a 0.3% decrease was recorded in 1987. The recent past has been characterized by declines in the real growth rate.

In 1984, the rate of real growth in telecommunications spending plunged by 5.7%. It continued to drop in 1985, when it was down by 3%. In 1986, it increased by 1.2%. The slump in spending by national entities may well have reflected a worldwide shift in the balance of power from public to private networks. Large institutional users the world over have been able, and frequently have, built or leased private networks to obtain services. The PTTs, thus, could decrease their investment since demand was decreased.

This short-sighted strategy, of course, conceded the large customer to other vendors. Now the PTTs have almost unanimously recognized that large customers can and will take their lucrative business elsewhere unless they provide high-quality service over the public network. Fortunately, the necessary technology is increasingly available to provide quality business services over the public network at competitive prices. As the international telecommunications community's commitment to the integrated services digital network, or ISDN, matures and is manifested in the public network, the PTTs' ability to compete for large customers will increase—and so will their incentive to compete.

The good news contained in this survey suggests that competition on the international level for large customers will intensify steadily. As competition intensifies, the stakes will increase rapidly. Winners will be amply rewarded and losers will be devastated. The big players are laying their wagers right now for a game in which coming in second means coming in last.

The primary beneficiaries of this intense competition are sure to be the large users. They can

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Methodology

The information in this report is based on exclusive primary research conducted by *Telephony's* Market Research Department in December 1987 and January 1988.

Each of the PTTs was queried on its network expansion budgets for 1984-89 and the anticipated distribution of the 1988 budget over 14 major plant and facilities areas.

Any estimates that appear in this report have been cross-checked by *Telephony's* Market Research Department against past reports from the PTTs and their most recent annual reports.

The rapid decline in the value of the U.S. dollar is clearly having a systematic effect on reported 1987 and 1988 PTT budgets when converted into dollars. For countries whose currencies have appreciated markedly, such as Japan and West Germany, local currency increases of 1.7% and 8.9% respectively translate into dollar increases of 13% and 16.8% when comparing 1988 budgets to 1987 budgets. The same effect applies to most European countries.

A number of other countries tie their currencies more closely to the U.S. dollar, and the appreciation effect is absent. South Korea, for example, increased its local currency budget by 16.7%, but this was reflected only as a 20.4% increase in dollar terms. Similarly, Taiwan, with a 21.8% increase in budget in local currency terms showed an increase of 28.4% in dollar terms.

Spending *continued*

play the private network vendors against the public network operators to ensure quality services at competitive prices.

To be sure, there are other factors at work. The health of the international economy is a big one.

The world economy has been on a roller-coaster ride recently. The international financial system suffered a massive coronary last autumn. Since then, restoratives have been applied and, so far, the stunned patient seems to be satisfactory, if a bit sluggish.

But no one is breathing freely yet.

In addition, tensions over trade and currency valuations that preceded last October's stock market

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TABLE 1 1987-1988 WORLD CONSTRUCTION EXPENDITURES ($000,000)

	IN CURRENT US$[a, b]	
	1987	1988
ZONE 1: NORTH AMERICA		
United States		
Regionals	14,063.6	14,057.8
Independents	5,941.4	5,762.2
Interexchange	4,544.2	4,631.8
Canada		
Bell Canada	1,486.1	1,670.3*
Other Telecom Canada	957.6*	1,076.3*
Bahamas	29.8	27.5
Bermuda	2.4	3.3
Dominican Republic	26.8	43.2*
Jamaica	27.3	31.4*
Trinidad & Tobago	33.3	44.4*
Subtotal	27,112.4	27,348.2
Extrapolated:		
Current US$	28,549.4	28,797.7
Constant (1984) US$	25,975.8	25,389.4
ZONE 2: AFRICA		
South Africa	965.0	738.4
Extrapolated:		
Current US$	2,011.8	1,648.6
Constant (1984) US$	1,830.4	1,453.5
ZONE 3-4: EUROPE		
Austria	913.6	1,048.1
Belgium	575.8	626.8
Cyprus	10.9	10.0
Denmark – Tydsk Tel	156.9	190.2
Finland – PTT	218.5	262.7
– Assoc.	298.6	343.4
France	5,714.4	6,219.8
West Germany	8,712.1	10,175.5
Italy	3,837.0	4,331.1
Netherlands	695.5	769.7*
Norway	621.7	706.2*
Portugal	282.2	421.7
Spain	2,341.0	3,148.2*
Sweden	1,326.7	1,288.2
Switzerland	1,623.2	1,859.3
United Kingdom	3,322.0	3,547.4*
Subtotal	30,650.1	34,948.1
Extrapolated:		
Current US$	36,058.9	41,115.4
Constant (1984) US$	32,808.3	36,249.3
ZONE 5: SOUTH AND CENTRAL AMERICA		
Brazil	1,050.4	1,263.3
Chile	59.4	88.3
Costa Rica	23.1	21.4*
Colombia/Medellin	47.7	46.1*
El Salvador	15.3	73.0
Mexico	398.8	433.0*
Peru	70.2	33.3*
Uruguay	59.3	54.9*
Venezuela	191.2	90.3*
Subtotal	1,915.4	2,103.8
Extrapolated:		
Current US$	2,736.2	3,005.4
Constant (1984) US$	2,489.6	2,649.7
ZONE 6: PACIFIC		
Australia	1,108.8	1,090.0*
Indonesia/Permutel	485.1	484.8*
New Zealand	311.5	422.9*
Philippines	78.0	76.5*
Singapore	178.1	183.9*
Thailand	180.3	350.5
Subtotal	2,341.9	2,608.7
Extrapolated:		
Current US$	2,927.4	3,260.9
Constant (1984) US$	2,663.5	2,875.0
ZONE 7: USSR		
Current US$	6,974.1*	7,253.1*
Constant (1984) US$	6,345.4	6,599.3
ZONE 8: FAR EAST		
Hong Kong	107.3	194.0*
Japan	12,178.3	13,761.5*
Korea	1,525.8	1,836.8
Taiwan	702.7	902.5
Subtotal	14,514.1	16,694.8
Extrapolated		
Current US$	18,142.7	20,868.6
Constant (1984) US$	16,507.2	18,398.7
ZONE 9: MIDDLE EAST		
Egypt	175.0	113.6*
India	598.8	608.8*
Israel	340.0	307.0
Kuwait	109.9	109.4*
Oman	93.6	93.6*
Syria	253.0	290.4*
United Arab Emirates	155.2	202.8*
Subtotal	1,725.6	1,725.7
Extrapolated:		
Current US$	3,263.9	3,196.6
Constant (1984) US$	2,969.7	2,818.3
GRAND TOTAL		
Identified Countries	86,198.6	93,420.9
Extrapolated:		
Current US$	100,654.4	109,146.2
Constant (1984) US$	91,589.8	96,433.1

Source: Telephony, a division of Intertec Publishing Corp.
Telephony estimate
a: 1987 at average annual exchange rates of International Monetary Fund and U.S. Federal Reserve System
1988 at mid-January 1988 exchange rate of Federal Reserve System.
b: assumes 3.1% average inflation during 1984-1988 (U.S. GNP Deflator)

scare have yet to be resolved. Until they are, the world economic picture will remain dicey.

Politically, the world has rarely seen more regional trouble than it does now. The Middle East, Africa and Latin America in particular suffer from agonizing political and social disputes. The trouble in the Middle East is the focus of considerable concern, given the pre-eminent role Middle Eastern oil plays in the world's economy. But Latin America's turmoil guarantees that political strife will continue to hamper the region's efforts to resolve its backbreaking economic problems.

Africa, troubled for many years, remains a desperately poor continent laden with people, natural resources, and multifaceted political and social conflict. Africa continues to be the least developed continent in terms of telecommunications services. No end to the continent's troubles is in sight. Until progress is made on its many fundamental problems, it is difficult to see how Africa's telecommunications infrastructure can be given much attention.

But if regional troubles vex the world as never before, there are several bright lights in the international political firmament.

The slump in spending by national entities may well have reflected a worldwide shift in the balance of power from public to private networks. Large institutional users . . . have . . . built or leased private networks to obtain services.

Relations between the Soviet Union and the United States today are more harmonious than they have been during this decade. Relations between China and the U.S.S.R. have improved steadily for several years. And the detente between the U.S. and China continues to guide the policy of each.

Superpower tensions, though far from resolved, are down. The prognosis is hopeful.

Leaving the prickly question of trade aside for a moment, political relations among the Western powers, including Japan, are solid. The Eastern Bloc is undergoing a mild thaw as a consequence of glasnost in the U.S.S.R. And political relations between Eastern and Western Europe continue to improve gradually.

In short, the world is struggling with numerous painful political troubles that hamper economic development in all sectors, including telecommunications. But right now, the most difficult problems are confined to regional levels. On the global political level, the moment is auspicious.

The balance is fragile. For instance, if any of the several political conflicts in the Middle East were to directly involve two or more superpowers, as could have happened last autumn in the Persian Gulf, the world's political climate would take a nasty turn for the worse overnight.

Likewise, economic tensions could profoundly affect the political equation. For instance, if the trade tensions among Western Europe, the U.S. and Japan were to worsen, they could well be expressed politically, weakening the Western powers.

But for the moment at least guarded optimism is justified.

The increase in telecommunications spending worldwide may well be an effect of this guarded optimism. It also can be looked upon as a potential cause of greater international harmony in the future.

International spending surveys, by their nature, lump nations together. Unfortunately, this tends to create the illusion that supranational forces not only shape national decisions but supersede decision-making on the national level.

Nothing could be further from the truth.

The important telecommunications investment decisions are made by national and, as is the case in the U.S., sub-national authorities. Together, those decisions define the international industry. The reverse does not hold.

Table 2 examines the spending levels of the Top 20 countries. Analysis of the Top 20 also reveals in stark relief the geography of telecommunications development at the present moment.

Eleven of the Top 20 countries

TABLE 2 TOP 20 COUNTRIES (1988 US $ EXPENDITURES)

Country	1988 Expenditures (US $000,000)	1987 Expenditures (US $000,000)	Increase (Decrease)	(%)
United States	24,451.8	24,549.2	(97.4)	(0.4)
Japan	13,761.5	12,178.3	1,583.1	13.0
West Germany	10,175.5	8,712.1	1,463.4	16.8
France	6,219.8	5,714.4	505.4	8.8
Italy	4,331.1	3,837.0	494.1	12.9
United Kingdom	3,547.4	3,322.0	225.4	6.8
Spain	3,148.2	2,341.0	807.2	34.5
Canada	2,746.6	2,443.6	303.0	12.4
Switzerland	1,859.3	1,623.2	236.1	14.5
Korea	1,836.8	1,525.8	311.0	20.4
Sweden	1,288.2	1,326.7	(38.6)	(2.9)
Brazil	1,263.3	1,050.4	212.9	20.3
Australia	1,090.0	1,108.8	(18.8)	(1.7)
Austria	1,048.1	913.6	134.5	14.7
Taiwan	902.5	702.7	199.8	28.4
Netherlands	769.7	695.5	74.1	10.7
South Africa	738.4	965.0	(226.6)	(23.5)
Norway	706.2	621.7	84.5	13.6
Belgium	626.8	575.8	51.0	8.9
India	608.8	598.8	10.0	1.7

are in Western Europe. No Eastern European country is in the Top 20. Three European countries—Italy, France and West Germany—are in the Top 5. Six—the three already cited plus the U.K., Spain and Switzerland—are in the Top 10.

Four of the Top 20 countries are in Asia: Japan, South Korea, Taiwan and India. South Korea has become the 10th largest country in the telecom world, by the way.

The two North American giants—the U.S. and Canada—are in the Top 10. Australia ranks 13th on the scale.

South Africa is the only country from Africa in the Top 20, ranking 17th.

Brazil, the troubled but gifted giant of South America, is the only country from Latin America in the Top 20. It ranks 12th.

TABLE 3 TOP 10 GROWTH BUDGETS 1987-1988 (MORE THAN US $100 MILLION PER YEAR)

Country	1988 Expenditures (US $000,000)	1987 Expenditures (US $000,000)	Increase (Decrease)	(%)
Japan	13,761.5	12,178.3	1,583.1	13.0
West Germany	10,175.5	8,712.1	1,463.4	16.8
Spain	3,148.2	2,341.0	807.2	34.5
France	6,219.8	5,714.4	505.4	8.8
Italy	4,337.1	3,837.0	491.1	12.9
Korea	1,836.8	1,525.8	311.0	20.4
Canada	2,746.6	2,443.6	303.0	12.4
Switzerland	1,859.3	1,623.2	236.1	14.5
United Kingdom	3,547.4	3,322.0	225.4	6.8
Brazil	1,263.3	1,050.4	212.9	20.3

Growth

It is interesting to examine how the rankings change when growth, not size, is used to rank countries.

The U.S., the largest country in terms of telecommunications expenditures by a wide margin—nearly double its closest competitor, Japan—disappears entirely from the Top 10 growth budgets, as Table 3 shows. Japan, on the other hand, ranks first using the growth scale.

European countries dominate the growth scale, too. Six of the Top 10 are Western European countries.

Spain is the real comer in the group. After years of relative lethargy, Spain is making a major commitment to telecommunications development.

Brazil is another interesting member of the Top 10 growth budgets, ranking 10th. Despite its gigantic economic woes, Brazil continues to make telecommunications development a national priority.

The Top 5 budget cutters, shown in Table 4, are animated by different motives and work under vastly different conditions.

Egypt, the top budget cutter, is a poor, crowded country with many development priorities besides telecommunications. In addition, Egypt is in a heavily militarized part of the world and is beset by substantial internal instability.

South Africa, though in some respects a wealthy country, is wracked by profound civil strife internally and troubled by extremely poor relations with the neighboring countries of Africa and most of the world. It is no surprise that South Africa ranks second among the leading trimmers.

Australia and Sweden are fifth and fourth on the trimmer scale, respectively. Both are peaceful nations. Both have excellent and mature telecommunications systems. Both have long been technological leaders. Their decisions to cut their telecom budgets this year, thus, derive from completely different circumstances and aspirations than inspire South Africa and Egypt.

Israel, ranked third on the trimmer scale, also enjoys a reputation for technological excellence and for providing quality social services. But Israel must fight. It is fighting against serious and seemingly intractable economic problems and against fundamental social problems that are now the focus of the world's attention. These struggles fuel political disputes within the government.

Underlying these three struggles is Israel's commitment to maintain a strong, efficient military sector. The importance to Israel of maintaining its military strength may or may not contribute to its social and political conflicts, but it certainly exacerbates its economic troubles.

As three of the Top 5 budget cutters illustrate, telecommunications development is an important subset, but only a subset, of economic development. Non-economic factors frequently influence economic decision-making and, consequently, telecommunications investments.

Telecommunications knits the world together. But it is only an expression of contemporary social expertise and needs.

Even a cursory review of 1988 international telecommunications spending plans demonstrates how intimately intertwined the telecommunications industry is with the most profound forces shaping distinct national experiences.

Telecommunications ties the world's islands together, which means it is not an island unto itself. □

TABLE 4 TOP 5 BUDGET CUTTERS 1987-1988 (MORE THAN US $100 MILLION PER YEAR)

Country	1988 Expenditures (US $000,000)	1987 Expenditures (US $000,000)	Increase (Decrease)	(%)
Egypt	113.6	175.0	(61.4)	(35.1)
South Africa	738.4	965.0	(226.6)	(23.5)
Israel	307.0	340.0	(33.0)	(9.7)
Sweden	1,288.2	1,326.7	(38.6)	(2.9)
Australia	1,090.0	1,108.8	(18.8)	(1.7)